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EXAMINER
WU, DOROTHY

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/266,253	Applicant(s) UJIIE ET AL.	
	Examiner Dorothy Wu	Art Unit 2697	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 March 1999* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 March 1999* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. New corrected drawings are required in this application because of the objections on the Notice of Draftperson's Patent Drawing Review, Form PTO 948. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9 and 30 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 9, the applicant has claimed that when the determination device judges that the apparatus is set to the external control state, the determination device causes the driving device to drive the image sensing optical system to the image sensing region in response to completion of an image sensing operation. However, on page 28, lines 16-25, the disclosure teaches that in the PC mode, after the completion of an image sensing, the CPU immediately

drives the optical system to the retracted, i.e. non image sensing, region. There is no antecedent basis for the claim in the disclosure.

Regarding claim 30, the applicant has claimed that when the determination device judges that the apparatus is set to a reproduction state, the determination device prevents the driving device from driving the image sensing optical system in the retracting direction. However, on page 27, lines 16-21, the disclosure teaches that when the camera is in the PLAY mode, which corresponds to the reproduction state of the claims, the barrier is kept closed and the lens is kept retracted. Therefore, when the camera is switched from another mode to the PLAY mode, the image sensing optical system should be retracted, not prevented from being retracted.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iida, U.S. Patent 6,457,881, in view of Lermann et al, U.S. Patent 4,258,998.

Regarding claim 1, Iida teaches an image sensing apparatus (col. 1, lines 5-6) comprising a determination device that judges whether the image sensing apparatus is at least in an image sensing state, or in an external control state in which the apparatus is controlled by an external controller unit (col. 10, lines 4-7, 20-23, and Fig. 13). Iida also teaches a driving device (col. 2,

lines 59-61), and that the determination device determines an operation of the driving device to open or close a barrier in accordance with a judgment result of the determination device (col. 9, line 66-col. 10, line 34, and Fig. 13). Iida does not teach a driving device that moves an image sensing optical system to image sensing and non image sensing regions. Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region, and a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the operative and inoperative positions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the determination device that judges the state of the image sensing apparatus and controls a driving device according to the state of the image sensing apparatus taught by Iida with the driving device that moves an image sensing optical system to image sensing and non image sensing regions taught by Lermann et al to make an image sensing apparatus that opens a barrier and moves the image sensing optical system to an image sensing region or moves the image sensing optical system to a non image sensing regions and closes a barrier in accordance with the state of the image sensing apparatus. One of ordinary skill would have been motivated to make such a modification to expose and extend the optical system when image sensing is occurring and to retract and cover the optical system when image sensing is not occurring.

Regarding claim 2, Iida teaches that in a case where the determination device judges that the image sensing apparatus is in the external control state, the determination device causes the driving device to open the barrier, which exposes the image sensing optical system for image sensing (col. 10, lines 20-22). Iida does not teach that the image sensing optical system is driven

to an image sensing region. Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region (col. 1, lines 8-9), and a motor for driving the optical system to the extended position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus taught by Iida with the practice of extending the image sensing optical system to an image sensing region to make an apparatus that drives the image sensing optical system to an image sensing region when the barrier is opened. One of ordinary skill would have been motivated to make such a modification to ready the camera for image sensing.

Regarding claim 3, Iida teaches that the determination device causes the driving device to open the barrier, thus exposing the image sensing optical system for image sensing, in response to a reception of an image sensing signal from the external controller unit, in a case where the determination device determines that the image sensing apparatus is in the external control state (col. 10, lines 45-48). Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region (col. 1, lines 8-9), and a motor for driving the optical system to the extended position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to drive the image sensing optical system to the image sensing region when the barrier is opened. See reasoning for claim 2.

Regarding claim 4, Iida teaches that the determination device causes the driving device to close the barrier, which places the image sensing optical system in a non image sensing region, in response to a completion of an image sensing operation (col. 10, lines 48-50). Iida does not teach the driving of the optical system to the non image sensing region. Lermann et al

teaches an optical system with a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the retracted, inoperative position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus taught by Iida with the practice of driving the image sensing optical system to a non image sensing region to make an apparatus that drives the optical system to a non image sensing region before closing the barrier. One of ordinary skill would have been motivated to make such a modification to protect the optical system when it is not in use.

Regarding claim 5, Iida teaches that the determination device comprises a timer for causing the driving device to close the barrier a predetermined time period after a completion of an image sensing operation (col. 11, lines 9-11). Lermann et al teaches an optical system with a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the inoperative position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to drive the image sensing optical system to the non image sensing region before closing the barrier. See reasoning for claim 4.

Regarding claim 6, Iida teaches that in a case where the image sensing signal is input again from the external controller unit during the predetermined time period, the determination device prevents the barrier from closing after the predetermined time period elapses (col. 11, lines 4-7). Iida does not teach that the image sensing optical system is prevented from being driven to a non image sensing region. Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region, and a retracted, inoperative

position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the operative and inoperative positions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus taught by Iida with the practice of extending and retracting the image sensing optical system to image sensing and non image sensing region to make an apparatus that prevents the optical system from being driven to the non image sensing region and the barrier from being closed when the image sensing signal is input again from the external controller unit during the predetermined time period. One of ordinary skill would have been motivated to make such a modification because the optical system must be kept in the image sensing region for an image capture to occur.

Regarding claim 7, Iida teaches that the barrier is kept closed when image transfer operations in the PC mode, which reads on the external control state, are being performed (col. 10, lines 53-55). Therefore, the determination device closes the barrier in a case where the determination device judges that the apparatus is in the external control state. Iida does not teach that the image sensing optical system is positioned in the non image sensing region. Lermann et al teaches an optical system with a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the inoperative position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus taught by Iida with the practice of positioning the image sensing optical system to the non image sensing region to make an apparatus that positions the image sensing optical system in the non image sensing region and closes the barrier in a case where the

determination device judges that the apparatus is in the external control state. One of ordinary skill would have been motivated to make such a modification to protect the optical system when it is not in use.

Regarding claim 8, Iida teaches that the barrier is kept closed when image transfer operations in the PC mode, which reads on the external control state, are being performed (col. 10, lines 53-55). Iida does not teach the prevention of the image sensing optical system from being driven to the image sensing region. Lermann teaches a motor for driving the optical system to the operative, image sensing and inoperative, non image sensing positions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus taught by Iida with the practice of extending and retracting the image sensing optical system to image sensing and non image sensing regions to make an apparatus that prevents the optical system from being driven to the image sensing region and the barrier from being opened when the apparatus is in the external control state. One of ordinary skill would have been motivated to make such a modification to protect the optical system when it is not in use.

As best understood from the language of the claim, regarding claim 9, Iida teaches that in the external control state, the determination device causes the driving device to close the barrier, which places the image sensing optical system in a non image sensing region, in response to a completion of an image sensing operation (col. 10, lines 45-50). Lermann et al teaches an optical system with a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the inoperative position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been

obvious to one of ordinary skill to drive the image sensing optical system to the non image sensing region when the barrier is to be closed. See reasoning for claim 4.

Regarding claim 10, Iida teaches that the determination device comprises a timer for causing the driving device to close the barrier a predetermined time period after a completion of an image sensing operation, in a case where the determination device judges that the apparatus has been set in the external control state (col. 11, lines 1-11). Lermann et al teaches an optical system with a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the inoperative position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to drive the image sensing optical system to the non image sensing region when the barrier is to be closed. See reasoning for claim 4.

Regarding claim 11, Iida teaches that in a case where the image sensing signal is input again from the external controller unit during the predetermined time period, the determination device prevents the barrier from closing after the predetermined time period elapses (col. 11, lines 4-7). Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region, and a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the operative and inoperative positions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to prevent the image sensing optical system from being driven to the non image sensing region when the barrier is prevented from being closed. See reasoning for claim 6.

Regarding claim 12, Iida teaches that in a case where the determination device judges that the apparatus is in a reproduction state, the determination device closes the barrier (col. 9, line 66-col. 10, line 13). Lermann et al teaches an optical system with a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the inoperative position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to position the image sensing optical system in the non image sensing region when the barrier is to be closed. See reasoning for claim 4.

Regarding claim 13, Iida teaches an operation device that selectively sets the apparatus into at least either one of the image sensing and external control states, wherein the operation device is provided on the exterior of the image sensing device (col. 2, lines 55-58, col. 9, lines 33-37, and Fig. 12).

Regarding claim 14, Iida teaches a signal processing device that converts, in a case where the apparatus is in the image sensing state, an optical image formed by the optical system, into an electrical signal for photography (col. 2, lines 63-64, and col. 10, lines 6-7).

Regarding claim 15, Lermann et al teaches that the non image sensing region includes a position where the optical system is stored (col. 1, lines 10-12).

Regarding claim 16, Lermann et al teaches that the non image sensing region includes a predetermined position where the optical system is collapsed in the body of the image sensing apparatus (col. 1, lines 10-12).

Regarding claim 17, Iida teaches that the determination device judges a state controlled by an external computer as the external control state (col. 9, lines 53-57, and col. 10, lines 21-23).

Regarding claim 18, Lermann et al teaches that the driving device includes a motor (col. 2, lines 16-17).

Regarding claim 19, Iida teaches a camera (col. 1, lines 22-23) comprising a driving device (col. 2, lines 59-61) and a determination device that judges whether the camera is at least in a photographing state, or in an external control state in which the camera is controlled by an external controller unit (col. 10, lines 4-7, 20-23, and Fig. 13). The determination device determines an operation of the driving device in accordance with a judgment result of the determination device (col. 9, line 66-col. 10, line 34, and Fig. 13). Iida does not teach a driving device that moves a photographing optical system to photographing and non photographing regions. Lermann et al teaches an optical system with an extended, operative position, which reads on the photographing region, and a retracted, inoperative position, which reads on the non photographing region (col. 1, lines 8-12). Lermann et al also teaches a motor for driving the optical system to the photographing and non photographing positions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the determination device that judges the state of the image sensing apparatus and controls a driving device according to the state of the image sensing apparatus taught by Iida with the driving device that moves a photographing optical system to photographing and non photographing regions taught by Lermann et al to make an image sensing apparatus that opens a barrier and moves the photographing optical system to a photographing

region or moves the photographing optical system to a non photographing region and closes a barrier in accordance with a judgment result of the determination device. One of ordinary skill would have been motivated to make such a modification to expose and extend the optical system when image sensing is occurring and to retract and cover the optical system when image sensing is not occurring.

Regarding claim 20, Iida teaches an image sensing apparatus (col. 1, lines 5-6) comprising a determination device that judges whether the image sensing apparatus is at least in an image sensing state, or in an external control state in which the apparatus is controlled by an external controller unit (col. 10, lines 4-7, 20-23, and Fig. 13). Iida also teaches a driving device (col. 2, lines 59-61), and that the determination device determines an operation of the driving device in accordance with a judgment result of the determination device (col. 9, line 66-col. 10, line 34, and Fig. 13). Iida does not teach a driving device that moves an image sensing optical system in extending and retracting directions. Lermann teaches a motor, which reads on the driving device, for driving the optical system in extending and retracting directions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the determination device that judges the state of the image sensing apparatus and controls a driving device according to the state of the image sensing apparatus taught by Iida with the driving device that moves an image sensing optical system in extending and retracting directions taught by Lermann et al to make an image sensing apparatus that opens a barrier and moves the image sensing optical system in an extending direction or moves the image sensing optical system in a retracting direction and closes a barrier in accordance with a judgment result of the determination device. One of

ordinary skill would have been motivated to make such a modification to expose and extend the optical system when image sensing is occurring and to retract and cover the optical system when image sensing is not occurring.

Regarding claim 21, Iida teaches that in a case where the determination device judges that the image sensing apparatus is in the external control state, the determination device causes the barrier to open for image sensing (col. 10, lines 20-24). Iida does not teach that the image sensing optical system is driven in the extending direction. Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region (col. 1, lines 8-9), and a motor for driving the optical system to the extended position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus taught by Iida with the practice of driving the image sensing optical system in the extending direction taught by Lermann et al to make an apparatus that opens the barrier and drives the image sensing optical system in the extending direction when the determination device judges that the image sensing apparatus is in the external control state. One of ordinary skill would have been motivated to make such a modification to ready the camera for image capture.

Regarding claim 22, Iida teaches that the determination device causes the driving device to open the barrier for image sensing in response to a reception of an image sensing signal from the external controller unit, in a case where the determination device determines that the image sensing apparatus is in the external control state (col. 10, lines 45-48). Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region (col. 1, lines 8-9), and a motor for driving the optical system to the extended position (col. 2,

lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to drive the image sensing optical system in the extending direction when the barrier is opened. See reasoning for claim 21.

Regarding claim 23, Iida teaches that the determination device causes the driving device to close the barrier in response to a completion of an image sensing operation (col. 10, lines 48-50). Iida does not teach the driving of the optical system in the retracting direction. Lermann et al teaches an optical system with a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the retracted, inoperative position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus taught by Iida with the practice of driving the image sensing optical system in the retracting direction to make an apparatus that drives the optical system in the retracting direction before the barrier is closed. One of ordinary skill would have been motivated to make such a modification to protect the optical system when it is not in use.

Regarding claim 24, Iida teaches that the determination device comprises a timer for causing the driving device to close the barrier a predetermined time period after a completion of an image sensing operation (col. 11, lines 9-11). Lermann et al teaches an optical system with a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the retracted, inoperative position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to drive the image sensing optical system in the retracting direction when the barrier is to be closed. See reasoning for claim 23.

Regarding claim 25, Iida teaches that in a case where the image sensing signal is input again from the external controller unit during the predetermined time period, the determination device prevents the barrier from closing after the predetermined time period elapses (col. 11, lines 4-7). Iida does not teach that the image sensing optical system is prevented from being driven in a retracting direction. Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region, and a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the operative and inoperative positions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus taught by Iida with the practice of extending and retracting the image sensing optical system to image sensing and non image sensing region to make an apparatus that prevents the optical system from being driven in the retracting direction when the image sensing signal is input again from the external controller unit during the predetermined time period. One of ordinary skill would have been motivated to make such a modification because the optical system must be kept in the image sensing region to capture an image.

Regarding claim 26, Iida also teaches that the barrier is kept closed when image transfer operations in the PC mode are being performed (col. 10, lines 53-55). Iida does not teach the prevention of the image sensing optical system from being driven in the extending direction. Lermann teaches a motor for driving the optical system to the extended, operative, image sensing and retracted, inoperative, non image sensing positions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the apparatus taught by Iida with the practice of extending and retracting the image sensing optical system to make an apparatus that prevents the optical system from being driven in the extending direction when the barrier is kept closed. One of ordinary skill would have been motivated to make such a modification because driving the optical system to the image sensing region would either open or damage the barrier.

Regarding claim 27, Ida teaches that in a case where the determination device judges that the apparatus is set in an external control state, the determination device causes the driving device to close the barrier in response to a completion of an image sensing operation (col. 10, lines 45-50). Lermann et al teaches an optical system with a retracted, inoperative position (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system in the retracting direction to the inoperative position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to drive the image sensing optical system in the retracting direction before closing the barrier. See reasoning for claim 23.

Regarding claim 28, Iida teaches that the determination device comprises a timer for causing the driving device to close the barrier a predetermined time period after a completion of an image sensing operation, in a case where the determination device judges that the apparatus has been in the external control state (col. 11, lines 1-11). Lermann et al teaches an optical system with a retracted, inoperative position (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system in the retracting direction to the inoperative position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to drive the image sensing optical system in the retracting direction before closing the barrier. See reasoning for claim 23.

Regarding claim 29, Iida teaches that in a case where the image sensing signal is input again from the external controller unit during the predetermined time period, the determination device prevents the barrier from closing after the predetermined time period elapses (col. 11, lines 4-7). Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region, and a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the operative and inoperative positions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to prevent the image sensing optical system from being driven in the retracting direction when the barrier is to be prevented from closing. See reasoning for claim 25.

As best understood from the language of the claims, regarding claim 30, Iida teaches that in a case where the determination device judges that the apparatus is in a reproduction state, the determination device closes the barrier (col. 9, line 66-col. 10, line 13).). Lermann et al teaches an optical system with a retracted, inoperative position (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system in the retracting direction to the inoperative position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to drive the image sensing optical system in the retracting direction before closing the barrier. See reasoning for claim 23.

Regarding claim 31, Iida teaches an operation device that selectively sets the apparatus into at least either one of the image sensing and external control states, wherein the operation device is provided on the exterior of the image sensing device (col. 2, lines 55-58, col. 9, lines 33-37, and Fig. 12).

Regarding claim 32, Iida teaches a signal processing device that converts, in a case where the apparatus is in the image sensing state, an optical image formed by the optical system, into an electrical signal for photography (col. 2, lines 63-64, and col. 10, lines 6-7).

Regarding claim 33, Iida teaches that the determination device determines a state controlled by an external computer as the external control state (col. 9, lines 53-57, and col. 10, lines 21-23).

Regarding claim 34, Lermann et al teaches that the driving device includes a motor (col. 2, lines 16-17).

Regarding claim 35, Iida teaches a camera (col. 1, lines 22-23) comprising a driving device (col. 2, lines 59-61) and a determination device that judges whether the camera is at least in a photographing state, or in an external control state in which the camera is controlled by an external controller unit (col. 10, lines 4-7, 20-23, and Fig. 13). The determination device determines an operation of the driving device in accordance with a judgment result of the determination device (col. 9, line 66-col. 10, line 34, and Fig. 13). Iida does not teach a driving device that moves a photographing optical system in extending and retracting directions. Lermann et al teaches a motor, which reads on the driving device, for driving the photographing optical system in the extending and retracting directions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the determination device that judges the state of the image sensing apparatus and controls a driving device according to the state of the image sensing apparatus taught by Iida with the driving device that moves a photographing optical system in extending and retracting directions taught by Lermann et al to make an image sensing apparatus

that opens a barrier and drives the image sensing optical system in the extending direction or moves the image sensing optical system in the retracting direction and closes a barrier in accordance with the state of the image sensing apparatus. One of ordinary skill would have been motivated to make such a modification to expose and extend the optical system when image sensing is occurring and to retract and cover the optical system when image sensing is not occurring.

Regarding claim 36, Iida teaches an image sensing apparatus (col. 1, lines 5-6) comprising a determination device that judges whether the image sensing apparatus is at least in an image sensing state or image reproduction state (col. 9, line 66-col. 10, line 7, and Fig. 13). Iida also teaches a driving device (col. 2, lines 59-61), and that the determination device determines an operation of the driving device in accordance with a judgment result of the determination device (col. 10, lines 5-8, 12-13). Iida does not teach a driving device that moves an image sensing optical system in image sensing and non image sensing regions. Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region, and a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor, which reads on the driving device, for driving the optical system to the operative, image sensing and inoperative, non image sensing regions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus taught by Iida with the driving device that moves an image sensing optical system in image sensing and non image sensing regions taught by Lermann et al to make an image sensing apparatus that opens a barrier and drives the image sensing optical system to the image sensing region or moves

the image sensing optical system to the non image sensing region and closes a barrier in accordance with the state of the image sensing apparatus. One of ordinary skill would have been motivated to make such a modification to expose and extend the optical system when image sensing is occurring and to retract and cover the optical system when image sensing is not occurring.

Regarding claim 37, Iida teaches that the determination device closes the barrier, thereby positioning the image sensing optical system in a non image sensing region, in a case where the determination device judges that the apparatus is in the image reproduction state (col. 9, line 66-col. 10, lines 2, 12-13). Lermann et al teaches an optical system with a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the retracted, inoperative position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to drive the image sensing optical system to the non image sensing region before closing the barrier. See reasoning for claim 4.

Regarding claim 38, Iida teaches that in a case where the determination device judges that the image sensing apparatus is in the image sensing state, the determination device causes the driving device to open the barrier, thus exposing the optical system and positioning it in an image sensing region (col. 10, lines 4-8). Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region (col. 1, lines 8-9), and a motor for driving the optical system to the extended position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to drive the image sensing optical system to the image sensing region after opening the barrier. See reasoning for claim 2.

Regarding claim 39, Iida teaches that in a case where the determination device judges that the image sensing apparatus is in the image reproduction state (col. 9, line 66-col. 10, line 2), the barrier is kept closed (col. 10, lines 12-13). Lermann teaches a motor for driving the optical system to the operative, extended, image sensing and inoperative, retracted, non image sensing positions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to prevent the image sensing optical system from being driven to the image sensing region when the barrier is to be kept closed. See reasoning for claim 26.

Regarding claim 40, Iida teaches that in a case where the determination device judges that the image sensing apparatus is in the image sensing state, the determination device causes the driving device to open the barrier for image sensing (col. 10, lines 4-8). Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region (col. 1, lines 8-9), and a motor for driving the optical system to the extended position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to drive the optical system to the image sensing region when the barrier is opened. See reasoning for claim 2.

Regarding claim 41, Lermann et al teaches that the non image sensing region includes a position where the optical system is stored (col. 1, lines 10-12).

Regarding claim 42, Lermann et al teaches that the non image sensing region includes a predetermined position where the optical system is collapsed in the body of the image sensing apparatus (col. 1, lines 10-12).

Regarding claim 43, Lermann et al teaches that the driving device includes a motor (col. 2, lines 16-17).

Regarding claim 44, Iida teaches a camera (col. 1, lines 22-23) comprising a driving device (col. 2, lines 59-61) and a determination device that judges whether the image sensing apparatus is at least in a photographing state, or in an image reproduction state (col. 9, line 66-col. 10, line 13, and Fig. 13). Iida also teaches that the determination device determines an operation of the driving device in accordance with a judgment result of the determination device (col. 9, line 66-col. 10, line 13, and Fig. 13). Iida does not teach a driving device that moves a photographing optical system to photographing and non photographing regions. Lermann et al teaches a photographing optical system with an extended, operative position, which reads on the photographing region, and a retracted, inoperative position, which reads on the non photographing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the operative and inoperative positions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus taught by Iida with the driving device that moves an photographing optical system to photographing and non photographing regions taught by Lermann et al to make an image sensing apparatus that opens a barrier and moves the photographing optical system to a photographing region or moves the photographing optical system to a non photographing regions and closes a barrier in accordance with the state of the image sensing apparatus. One of ordinary skill would have been motivated to make such a modification to expose the optical system when image sensing is occurring and to retract and cover the optical system when image sensing is not occurring.

Regarding claim 45, Iida teaches an image sensing apparatus (col. 1, lines 5-6) comprising a determination device that judges whether the image sensing apparatus is at least in

an image sensing state, or in an image reproduction mode (col. 9, line 66-col. 10, line 13, and Fig. 13). Iida also teaches a driving device (col. 2, lines 59-61), and that the determination device determines an operation of the driving device in accordance with a judgment result of the determination device (col. 9, line 66-col. 10, line 34, and Fig. 13). Iida does not teach a driving device for moving an image sensing optical system in extending and retracting directions. Lermann et al teaches a motor for driving the image sensing optical system in extending and retracting directions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus taught by Iida with the driving device that moves an image sensing optical system in extending and retracting directions taught by Lermann et al to make an image sensing apparatus that extends or retracts the image sensing optical system in accordance with the state of the image sensing apparatus. One of ordinary skill would have been motivated to make such a modification to extend and expose the optical system when image sensing is occurring and to retract and cover the optical system when image sensing is not occurring.

Regarding claim 46, Iida teaches that in a case where the determination device judges that the image sensing apparatus is in the image reproduction state (col. 9, line 66-col. 10, line 2), the barrier is kept closed (col. 10, lines 12-13). Lermann teaches a motor for driving the optical system to the extended, operative, image sensing and retracted, inoperative, non image sensing positions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to prevent the image sensing optical system from being extended when the barrier is kept closed. See reasoning for claim 26.

Regarding claim 47, Iida teaches that in a case where the determination device judges that the image sensing apparatus is in the image sensing state, the determination device causes the driving device to open the barrier, thus exposing the optical system and positioning it in an image sensing region (col. 10, lines 4-8). Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region (col. 1, lines 8-9), and a motor for driving the optical system to the extended position (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). It would have been obvious to one of ordinary skill to drive the optical system to the image sensing region when the barrier is opened. See reasoning for claim 4.

Regarding claim 48, Lermann et al teaches that the driving device includes a motor (col. 2, lines 16-17).

Regarding claim 49, Iida teaches a camera (col. 1, lines 22-23) comprising a determination device that judges whether the image sensing apparatus is at least in a photographing state, or in an image reproduction mode (col. 9, line 66-col. 10, line 13, and Fig. 13). Iida also teaches a driving device (col. 2, lines 59-61), and that the determination device determines an operation of the driving device in accordance with a judgment result of the determination device (col. 9, line 66-col. 10, line 34, and Fig. 13). Iida does not teach that the optical system is driven in extending and retracting directions. Lermann et al teaches a motor for driving the optical system in extending and retracting directions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus taught by Iida with the driving device that moves an image sensing optical system in extending and retracting directions taught by Lermann et al to make an image sensing apparatus that extends or retracts the image sensing optical

system in accordance with the state of the image sensing apparatus. One of ordinary skill would have been motivated to make such a modification to extend and expose the optical system when image sensing is occurring and to retract and cover the optical system when image sensing is not occurring.

Regarding claim 50, Iida teaches a control method for an image sensing apparatus comprising a first step for judging whether an image sensing apparatus is at least in an image sensing state or in an external control state in which said image sensing apparatus is controlled by an external controller unit, a second step for determining an operation of a driving device to open or close a barrier to expose or conceal an optical system in accordance with a judgment result of said first step (Fig. 13). Iida does not teach that the driving device drives the optical system to image sensing and non image sensing regions. Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region, and a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the image sensing and non image sensing positions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the method taught by Iida with the method taught by Lermann et al to make a method wherein the optical system is driven to image sensing or non image sensing regions in tandem with opening or closing the barrier, in response to the judgment result of the first step. One of ordinary skill would have been motivated to make such a modification to extend and expose the optical system when image sensing is occurring and to retract, cover, and thus protect the optical system when image sensing is not occurring.

Regarding claim 51, Iida teaches a control method for an image sensing apparatus comprising a first step for judging whether an image sensing apparatus is at least in an image sensing state or in an external control state in which said image sensing apparatus is controlled by an external controller unit, a second step for determining an operation of a driving device to open or close a barrier to expose or conceal an optical system in accordance with a judgment result of said first step (Fig. 13). Iida does not teach that the driving device drives the optical system to extending or retracting directions. Lermann et al teaches an optical system with an extended, operative position and a retracted, inoperative position (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system in the extending and retracting directions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the method taught by Iida with the method taught by Lermann et al to make a method wherein the optical system is driven in extending and retracting directions in tandem with opening or closing the barrier, in response to the judgment result of the first step. One of ordinary skill would have been motivated to make such a modification to extend and expose the optical system when image sensing is occurring and to retract, cover, and thus protect the optical system when image sensing is not occurring.

Regarding claim 52, Iida teaches a control method for an image sensing apparatus comprising a first step for judging whether an image sensing apparatus is at least in an image sensing state or in an image reproduction state, and a second step for determining an operation of a driving device to open or close a barrier to expose or conceal an optical system in accordance with a judgment result of said first step (Fig. 13, and col. 10, lines 12-13). Iida does not teach that the driving device drives the optical system to image sensing and non image sensing regions.

Lermann et al teaches an optical system with an extended, operative position, which reads on the image sensing region, and a retracted, inoperative position, which reads on the non image sensing region (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system to the image sensing and non image sensing positions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the method taught by Iida with the method taught by Lermann et al to make a method wherein the optical system is driven to image sensing or non image sensing regions in tandem with opening or closing the barrier, in response to the judgment result of the first step. One of ordinary skill would have been motivated to make such a modification to extend and expose the optical system when image sensing is occurring and to retract, cover, and thus protect the optical system when image sensing is not occurring.

Regarding claim 53, Iida teaches a control method for an image sensing apparatus comprising a first step for judging whether an image sensing apparatus is at least in an image sensing state or in an image reproduction state, and a second step for determining an operation of a driving device to open or close a barrier to expose or conceal an optical system in accordance with a judgment result of said first step (Fig. 13, and col. 10, lines 12-13). Iida does not teach that the driving device drives the optical system in extending and retracting directions. Lermann et al teaches an optical system with an extended, operative position and a retracted, inoperative position (col. 1, lines 8-12). Lermann also teaches a motor for driving the optical system in the extending and retracting directions (col. 2, lines 16-22; col. 4, line 65-col. 5, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the method taught by Iida with the method taught by Lermann et al to make a method

wherein the optical system is driven in extending and retracting directions in tandem with opening or closing the barrier, in response to the judgment result of the first step. One of ordinary skill would have been motivated to make such a modification to extend and expose the optical system when image sensing is occurring and to retract, cover, and thus protect the optical system when image sensing is not occurring.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dorothy Wu whose telephone number is 703-305-8412. The examiner can normally be reached on Monday-Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached at 703-305-4863.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC 20231

Or faxed to:

703-872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703-306-0377.

Kimberly A. Williams
Primary Examiner
Technology Center 2600

DW
March 24, 2003